ACC.12
61st Annual Scientific Session & Expo
ACC-i2 with TCT innovation in intervention

E854
JACC March 27, 2012
Volume 59, Issue 13

Heart Failure

CONCENTRIC LEFT VENTRICULAR HYPERTROPHY AS INDEPENDENT PREDICTOR OF 1-YEAR REHOSPITALIZATION AND MORTALITY IN PATIENTS HOSPITALIZED FOR ACUTE HEART FAILURE AND PRESERVED EJECTION FRACTION

ACC Oral Contributions
McCormick Place South, S405
Saturday, March 24, 2012, 9:15 a.m.-9:30 a.m.

Session Title: Predicting Outcomes in Heart Failure: Biomarkers and Beyond
Abstract Category: 14. Heart Failure: Clinical
Presentation Number: 905-8

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Background: Whether concentric left ventricular (LV) hypertrophy (LVH) in heart failure with preserved ejection fraction (HFPEF) is associated with increased risk of adverse cardiovascular events is not well studied. We hypothesized that concentric LVH carry increased risk of 1-year mortality and rehospitalization.

Methods: Prospective longitudinal single-centre study of 199 consecutive patients hospitalized for HFPEF. Echocardiography was performed, and LV mass index (LVMi) and relative wall thickness (RWT) were calculated, and patients stratified into groups: normal geometry (A), concentric remodeling (B), eccentric LVH (C) and concentric LVH (D). Primary outcome was assessed by hierarchical censoring of death, following by rehospitalization events.

Results: (see table). Median LVMi and RWT were 113 g/m2 and 0.44. At 1 year, 71 patients had outcome events (28 deaths, 43 rehospitalizations). Relative to group A, 1-year mortality after adjusting for baseline covariates, significantly increased in groups B to D, with respective hazard ratios [HR] (95%CI): 3.30 (0.37 - 29.49); 3.02 (0.34 - 27.04); and 7.75 (1.02-58.94).Multivariable logistic regression identified concentric LVH adjusting for clinical and other parameters, as the most consistent predictor of both 1-year mortality (odds ratio [OR] (95%CI): 2.46 (1.08, 5.61), p=0.033) and rehospitalization (2.64 (1.30, 5.34), p=0.007).

Conclusions: In HFPEF, concentric LVH confers high risk for 1-year mortality and rehospitalization.

Baseline clinical and echocardiographic characteristics

Variable	Concentric LVH (n=61)	Without concentric LVH (n=138)	p value
Age (years)	75 (68, 81)	74 (66, 80)	0.184
Female %(n)	64% (39)	55% (76)	0.243
Diabetes %(n)	23% (14)	23% (31)	0.94
Hypertension %(n)	80% (49)	75%(104)	0.444
Prior MI %(n)	18% (11)	13%(18)	0.358
Creatinine (umol/L)	113 (89, 155)	92 (74, 129)	0.011
Serum Sodium (mmol/L)	138 (136, 140)	138 (135, 140)	0.151
Relative wall thickness	0.51 (0.46, 0.62)	0.40 (0.35, 0.48)	0.0001
LV mass index (g/m2)	137 (121, 163)	96 (81, 126)	0.0001